Remarks

Claims 1-5 are pending in the application. Claims 1-5 are rejected. Claims 1, 2, 4 and 5 are amended herein. All rejections and objections are respectfully traversed.

Claims 1, 2, 4, and 5 are amended to clarify what is claimed. "data" is inserted before "packet" in claims 1, 2, 4, and 5 to clarify that the packets are data packets as distinguished from control packets. Further, while it is understood that edge switches have media access control address lookup tables, that term has been deleted to avoid confusion with the network address lookup tables, which are limited to having "only for sources and destinations local to the edge switch on both the first and second sub-nets."

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ivaturi (U.S. 6,873,603) in view of Gallo, et al. (U.S. 6,907,469 – "Gallo").

The shortcoming of Gallo have been asserted in the respone to the previous action and are incorporated herein by reference in there entirety.

Ivaturi is directed to layer 2 bridging across a WAN (IP cloud). In Ivaturi, peer bridges include Layer 3 functionality to transmit across the WAN. Further, all referenced sections of Ivaturi describe control packets used to populate local and remote media access control lookup tables for peer bridges that include Layer 3 functionality to communicate layer 2 address information across an "IP cloud" (Layer 3 network) which has nothing to do with what is claimed.

The invention, as recited in claim 1, is a method of operating a network switch which is an edge switch in an Ethernet communication network having a multiplicity of sub-nets, is arranged to receive and forward packets which include media access control address data and network address data, and is in communication with a core router via an uplink. Therefore, it should be understood that the invention is an improvement for use in L2/L3 switches according to claim 1, an improved L2/L3 switch according to claim 4, and a combination of improved L2/L3 switch and a router connected by an uplink according to claim 4. The rejection is traversed hereafter on an element-by-element basis.

Claimed 1 recites "performing a network address look-up in respect of a packet, which is received by the edge switch from a source local to the edge switch and on a first sub-net only if the packet has a media access control destination address of the core router."

The rejection at page 3 refers to Ivaturi at column 5 and column 9:

> performing a network address look-up in respect of packet, which is received by the edge switch from a source local to the edge switch and on a first sub-net and only if the packet has a media access control destination address of the core router (DLSw router2, receives update with the MAC address of A, col: 5, lines: 27-30; and MAC address of the bridge is read from the SA field of the MAPP request frame, which (MAPP) is received by all end stations connected to the LAN, col: 9, lines: 18-20);

There is no network address lookup performed at all in the above cited section of Ivaturi. Above, Ivaturi describes router2 receiving a MAC address of A, which is an end station. Claimed is performing a network address

lookup, only if a packet sent from a device local to the edge switch has a destination address of the core router. Ivaturi never describes what is claimed. Further, the rejection cites 'MAC address of the bridge is read from the SA field of the MAPP request frame.' A bridge MAC address read from a source address field can never make obvious performing a network address lookup on a packet "only if the data packet has a media access control destination address of the core router" as claimed. Therefore, Ivaturi never teaches performing a network address lookup at an edge switch, as claimed. The Examiner is requested to explain, with specificity, where Ivaturi describes performing a network address lookup "only if the data packet has a media access control destination address of the core router" as claimed.

Claim 1 further recites "forwarding the data packet directly towards its destination in response to the network destination address data in the data packet, without the data packet traversing the core router via the uplink, when the network destination address is a destination local to the edge switch, but on a second sub-net." There is absolutely no teaching in Ivaturi that describes forwarding, as claimed. The Examiner cites layer 2 bridging at columns 9 and 10, which has nothing to do with a layer 2/3 device (edge switch) performing a layer 3 lookup if a layer 2 aggress is for a core router, and then not sending the packet to its L2 destination address if the L3 network address is local to the edge switch, as claimed. The Examiner is respectfully requested to show, with specificity, where the forwarding element as claimed is taught by Ivaturi. The currently cited section at columns 9 and 10 can never be used to make the invention obvious.

Gallo describes a single L2/L3 network switch/router including a logical bridge (layer 2), a logical router (layer 3), and one or more control points (CP). Gallo is explicitly directed to handling frames originating from or directed to a control point, see, col. 2, lines 19-20, below:

> In view of the above, an improved method of handling frames destined for or originating from the CP is needed.

See also, col. 2, lines 23-33, below:

> According to the present invention, the logical bridging function for frames destined for or originating from the CP is offloaded from the CP to a network processor. In a preferred embodiment, frames destined for or originating from the CP are sent to a network processor directly connected to the CP. The network processor performs all the L2 level bridging operations needed by the CP, including MAC address learning for incoming frames, and destination address look-ups and frame forwarding for frames originating from the CP.

The claims as amended distinguish the switch as an L2/L3 capable edge switch, and the router as a core router (generally also L2/L3), which are two distinct devices connected via an uplink. The internal processing of packets within a single L2/L3 bridge/router described in Gallo can therefore never anticipate what is claimed because, as a person of ordinary would readily understand that the invention performs a Layer 3 look-up ***only if*** the packet has a Layer 2 MAC destination address of the core router, which can result in the beneficial reduction of packet traffic across the uplink if the Layer 3 IP address is for a device locally connected to the edge switch. Otherwise, the packet is sent to the router via the uplink. In contrast, Gallo describes a device that performs L2/L3 bridging and routing according to the prior art and without the conditional look-up for avoiding the uplink recited in the claims. Further, Gallo is directed only to packets that originate from or are destined for a CP within a single device, not packets passing through a switch that are destined for a core router, as claimed. The Examiner is requested to specifically point out, citing column and line, where Gallo

teaches an edge switch performing an L3 network address look-up ***only if*** the MAC destination address is for a core router connected to the edge switch by an up-link to transmit the packet directly to the destination local to the edge switch instead of the core router via the uplink, as claimed. The combination of logical switch and logical router in a single device as taught by Gallo can never anticipate what is claimed. In short, Gallo performs L3 processing if the MAC destination address of a packet is for the CP of the Gallo device. That is a normal, prior art router function. In contrast, the invention performs an L3 lookup if the MAC destination address of a packet is that of a different L3 device, which is connected to the edge switch by an uplink.

The above arguments are applicable to the rejection of dependent claims 2 and 3, and independent claims 4 and 5, which recite, respectively, an edge switch and an edge switch and router combination that operate according to the method recited in claim 1.

It is believed that this application is now in condition for allowance. A notice to this effect is respectfully requested.

Should further questions arise concerning this application, the Examiner is invited to call Applicant's attorney at the number listed below.

Please charge any shortage in fees due in connection with the filing of this paper to Deposit Account 50-3650.

Respectfully submitted,
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